

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449AU.S. Patent and Trademark Office  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	101-736896
				Filing Date	12/17/2003
				First Named Inventor	Boris A. MASLOV
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	5	Attorney Docket Number	544092000124

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.†	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code² (if known)			
JL		6,492,756-B1	12-10-2002	Maslov et al.	
		6,420,795-B1	07-16-2002	Mikhail et al.	
		6,417,650-B1	07-09-2002	Stefanovic et al.	
		6,394,209-B1	05-28-2002	Goehring et al.	
		6,362,586-B1	03-26-2002	Naidu	
		6,215,198-B1	04-10-2001	Inada et al.	
		6,213,571-B1	04-10-2001	Yamada et al.	
		6,209,672-B1	04-03-2001	Severinsky	
		6,003,626	12-21-1999	Ibaraki et al.	
		6,002,234	12-14-1999	Ohm et al.	
		5,997,107	12-07-1999	Koga et al.	
		5,939,807	08-17-1999	Patyk et al.	
		5,929,612	07-27-1999	Eisenhaure et al.	
		5,910,716	06-08-1999	Olsen et al.	
		5,847,530	12-08-1998	Hill	
		5,708,337	01-13-1998	Breit et al.	
		5,677,605	10-14-1997	Cambier et al.	
		5,652,485	07-29-1997	Spiegel et al.	
		5,549,371	08-27-1996	Konaga et al.	
		5,549,172	08-27-1996	Mutoh et al.	
		5,438,228	08-01-1995	Couture et al.	
		5,418,437	05-23-1995	Couture et al.	
		5,319,844	06-14-1994	Huang et al.	
		5,311,092	05-10-1994	Fisher	
		5,028,804	07-02-1991	Lauw	
		4,806,814	02-21-1989	Nold	
		4,703,189	10-27-1987	DeValentin et al.	
		4,472,649	09-18-1984	Namba et al.	
		4,438,341	03-20-1984	Winterbotham	
		4,316,699	02-23-1982	Schott et al.	
		5,034,675	7/1991	Nerowski et al.	
		5,258,697	11/1993	Ford et al.	
		5,365,137	11/1994	Richardson et al.	
		6,400,059-B1	06-04-2002	Hsu	
	6,384,496-B1	05-07-2002	Pyntikov et al.		
	6,380,648-B1	04-30-2002	Hsu		
	6,356,005-B1	03-12-2002	Hsu		
	6,348,752-B1	02-19-2002	Erdman et al.		
	6,278,216-B1	08-21-2001	Li		

Examiner Signature	<i>[Signature]</i>	Date Considered	Apr 15, 05
-----------------------	--------------------	--------------------	------------

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

[illegible]

va-52980

Sept 15, 05

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449AU.S. Patent and Trademark Office  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/736896
				Filing Date	12/17/2003
				First Named Inventor	Boris A. MASLOV
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	3	of	5	Attorney Docket Number	544092000124


FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
ga		DE 19909277-A1	10/21/1999			
ga		EP 0 006 669 A	1/1980			
ga		WO 90/11641	10/1990			
ga		DE 195 03 492 A1	08/1996			
ga		DE 197 04 576 A1	08/1998			
ga		EP 0 866 547 A1	09/1998			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See attached Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	D	IRVING M. GOTTLIEB, Electric Motors and Control Techniques, 2nd Edition, 1994, TAB Books (Imprint of McGraw Hill), New York, pp. 147-151, 207-210 and 235-239	
	DA	JACEK F. GIERAS and MITCHELL WING, Permanent Magnet Motor Technology, 2nd Edition, 2002, Marcel Dekker, Inc., New York, pp. 230-234, 238-264, 275-276, 283-285, 353-359 and 369-373	
	DB	THOMAS M. JAHNS, "Improved Reliability in Solid-State AC Drives by Means of Multiple Independent Phase-Drive Units", IEEE Transactions on Industry Applications, Vol. IA-16, No. 3, May/June 1980, pp. 321-331	
	DC	O. WASYNICZUK, S.D. SUDHOFF, K.A. CORZINE, JERRY L. TICHENOR and P.C. KRAUSE, "A Maximum Torque per Ampere Control Strategy for Induction Motor Drives," IEEE Transactions on Energy Conversion, Vol. 13, No. 2, June 1998, pp. 163-169	
	DD	V. ARCIDIACONO, S. CORSI, G. TAGLIABUE, G. OTTAVIANI, S. TOGNO, G. BAROFFIO, C. RAFFAELLI and E. ROSA, "The ENEL's Experience on the Evolution of Excitation Control Systems through Microprocessor Technology," IEEE Transactions on Energy Conversion, Vol. 13, No. 3, September 1998, pp. 292-299	
	DE	M.A. RAHMAN and M.A. HOQUE, "On-line Adaptive Artificial Neural Network Based Vector Control of Permanent Magnet Synchronous Motors," IEEE Transactions on Energy Conversion, Vol. 13, No. 4, December 1998, pp. 311-318	

Examiner Signature	<i>[Signature]</i>	Date Considered	Sept 15, 05
-----------------------	--------------------	--------------------	-------------

va-52980

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449AU.S. Patent and Trademark Office  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/ 736 896
				Filing Date	12/17/2003
				First Named Inventor	Boris A. MASLOV
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	4	of	5	Attorney Docket Number	544092000124

DF	T.M. Empson, "Energy-Saving Systems for Induction Motors," 1998, at <a href="http://home.clear.net.nz/pages/lmphotronics/es090698.pdf">home.clear.net.nz/pages/lmphotronics/es090698.pdf</a>
DG	B.J. CHALMERS and W. WU, "An Axial-Flux Permanent-Magnet Generator for a Gearless Wind Energy System," IEEE Transactions on Energy Conversion, Vol. 14, No. 2, June 1999, pp. 251-257
DH	CHIH-YI HUANG, TIEN-CHI CHEN and CHING-LIEN HUANG, "A Microcomputer-based Induction Motor Drive System Using Current and Torque Control," IEEE Transactions on Energy Conversion, Vol. 14, No. 4, December 1999, pp. 874-880
DI	R. BLISSENBACH, G. HENNEBERGER, U. SCHAFER and W. HACKMANN, "Development of a Transverse Flux Traction Motor in a Direct Drive System," IECM2000 Proceedings, Vol. III, August 30, 2000, pp. 1457-1460
DJ	HERNAN DE BATTISTA, RICARDO J. MANTZ AND CARLOS F. CHRISTIANSEN, "Dynamical Sliding-Mode Power Control of Wind-Driven Induction Generators," IEEE Transactions on Energy Conversion, Vol. 15, No. 4, December 2000, pp. 451-457
DK	R. BLISSENBACH and G. HENNEBERGER, "New Design of a Soft Magnetic Composite Transverse Flux Machine with Special Attention on the Loss Mechanisms," presented at Electromotion '01 at Bologna, Italy on June 20, 2001
DL	SURESH H. JANGAMSHETTI and V. GURUPRASADA RAU, "Optimum Siting of Wind Turbine Generators," IEEE Transactions on Energy Conversion, Vol. 16, No. 1, March 2001, pp. 8-13
DM	EDUARD MULJADI, HERBERT L. HESS and KIM THOMAS, "Zero Sequence Method for Energy Recovery from a Variable-Speed Wind Turbine Generator," IEEE Transactions on Energy Conversion, Vol. 16, No. 1, March 2001, pp. 99-103
DN	JAWAD FAIZ and MOHAMMAD B.B. SHARIFIAN, "Different Techniques for Real Time Estimation of an Induction Motor Rotor Resistance in Sensorless Direct Torque Control for Electric Vehicle," IEEE Transactions on Energy Conversion, Vol. 16, No. 1, March 2001, pp. 104-109
DO	Z. CHEN and E. SPOONER, "Grid Power Quality with Variable Speed Wind Turbines," IEEE Transactions on Energy Conversion, Vol. 16, No. 2, June 2001, pp. 148-154
DP	M. NASIR UDDIN, TAWFIK S. RADWIN and M. AZIZUR RAHMAN, "Performance of Interior Permanent Magnet Motor Drive Over Wide Speed Range," IEEE Transactions on Energy Conversion, Vol. 17, No. 1, March 2002, pp. 79-84
DQ	TIEN-CHI CHEN and TSONG-TERNG SHEU, "Model Reference Neural Network Controller for Induction Motor Speed Control," IEEE Transactions on Energy Conversion, Vol. 17, No. 2, June 2002, pp. 157-163
DR	T.F. CHAN, LIE-TONG YAN and SHAO-YUAN FANG, "In-Wheel Permanent-Magnet Brushless dc Motor Drive for an Electric Bicycle," IEEE Transactions on Energy Conversion, Vol. 17, No. 2, June 2002, pp. 229-233
DS	K.L. SHI, T.F. CHAN, Y.K. WONG and S.L. HO, "A Rule-Based Acceleration Control Scheme for an Induction Motor," IEEE Transactions on Energy Conversion, Vol. 17, No. 2, June 2002, pp. 254-259
DT	DAVID A. TORREY and JAMES M. KOKERNAK, "Power Steering: Brushless DC or Switched Reluctance?" Power Electronics Technology, Aug. 2002, pp. 24-33
DU	VACON PLC, "Vacon NXS: Advanced Motor Control," undated, at

Examiner Signature	<i>[Signature]</i>	Date Considered	Sept 15, 05.
--------------------	--------------------	-----------------	--------------

va-52980

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449AU.S. Patent and Trademark Office  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	101-736 896
				Filing Date	12/17/2003
				First Named Inventor	Boris A. MASLOV
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	5	of	5	Attorney Docket Number	544092000124

gk		www.vacon.com/products/nxs.html	
gk	DV	V S RAMSDEN, B C MECROW and H C LOVATT, "Design of an In-Wheel Motor for a Solar-Powered Electric Vehicle," undated, at www.tip.csiro.au/Machines/papers/iwscem/	
gk		UQM Technologies, Inc. press release dated September 17, 2002 and available on the Web at www.uqm.com/press/news/03-19.html	
		Part of the UQM Technologies, Inc. 2002 Annual Report dated June 19, 2002 and available on the Web at www.uqm.com/investor/annual/02Technology.pdf	
gk		Jansson, "Advances in soft magnetic composites based on iron powder", Soft Magnetic Materials Conference, Barcelona, Spain, April 1998	
gk		Jack et al., "Permanent magnet machines with powdered iron cores and pre-pressed windings", IEEE IAS Conference, Phoenix, USA, Oct. 1999	
gk		White Paper: Induction Motors - constant frequency; constant voltage variable frequency/variable voltage, Reliance Electric, http://www.reliance.com/prodserv/motgen/b7097_2.htm, 2001	
gk		Jansson, et al., "Magnetic assessment of SMC materials", 21st Annual Conference on Properties and Applications of Magnetic Materials, Chicago, USA, May 2002	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	<i>Ed. Alf.</i>	Date Considered	Sept 15, 05
-----------------------	-----------------	--------------------	-------------

va-52980va-32160



PTO/SB/08 (2-92)

Sheet 1 of 1

Form PTO-1449

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number 544092000122

Application Number 10/736,896

Applicant

Boris A. MASLOV et al.

Filing Date December 17, 2003

Group Art Unit 2837

Mailing Date August 25, 2004

## U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
gh	1.	7/1991	5,034,675	Nerowski et al.			
	2.	3/1994	5,289,980	Toyoda et al.			
gh	3.	11/1995	5,465,806	Higasa et al.			
gh	4.	12/2002	2002/0179349 A1	Field			

## FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO
gh	5.	10/1990	WO 90/11641	PCT			
gh	6.	2/1991	03031029	Japan			X abs only
	7.	10/1998	EP 0 913 292 A2	Europe			
	8.	4/2001	WO 01/25049 A1	PCT			

## OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title
	9.	Terashima et al., "Novel motors and controllers for high performance electric vehicle with 4 in-wheel motors, Industrial Electronics, Control, and Instrumentation, 1996, Proceedings of the 1996 IEEE IECON 22nd International Conference on Taipei, Taiwan 5-10 Aug. 1996, 5 August 1996, pp 20-27
	10.	Sekimori et al., "Development of Toyota coaster hybrid EV", EVS-13, 13th International Electric Vehicle Symposium, Osaka, Oct. 13-16, 1996, Vol. 2 Symp 13, 13 October 1996, pp 16-23

EXAMINER:

*Edwell*

DATE CONSIDERED:

*Sept 15, 05*

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.



PTO/SB/08 (2-92)  
Sheet 1 of 1

Form PTO-1449

Docket Number 544092000124

Application Number 10/736,896

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

Applicant

Boris A. MASLOV et al.

Filing Date December 17, 2003

Group Art Unit 3611

Mailing Date August 25, 2004

U.S. PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Name	Class	Subclass	Filing Date If Appropriate
<i>ga</i>	1.	3/1994	5,289,890	Toyoda et al.			
<i>ga</i>	2.	11/1994	5,365,137	Richardson et al.			
<i>ga</i>	3.	4/1999	5,894,902	Cho			
<i>ga</i>	4.	8/2001	6,278,216 B1	Li			
<i>ga</i>	5.	11/2003	2003/0213630 A1	Pyntikov et al.			

FOREIGN PATENT DOCUMENTS

Examiner Initials	Ref. No.	Date	Document No.	Country	Class	Subclass	Translation YES NO
<i>ga</i>	6.	6/1979	0 006 669 A1	Europe			X
<i>ga</i>	7.	3/1989	0 334 112 A1	Europe			X
<i>ga</i>	8.	10/1990	WO 90/11641	PCT			
<i>ga</i>	9.	6/1995	WO 95/16300	PCT			
<i>ga</i>	10.	7/2000	199 49 294 C1	Germany			X

OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

Examiner Initials	Ref. No.	Title

EXAMINER:

*ga*

DATE CONSIDERED:

*September 15, 2005*

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.



ALTERNATIVE TO PTO/SB/08a/b (06-03)

<b>Substitute for form 1449/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (Use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/736,896
				Filing Date	December 17, 2003
				First Named Inventor	Boris A. MASLOV
				Art Unit	<del>3648</del> 2837
Sheet	1	of	1	Examiner Name	B. L. Swenson <i>Colon-Santana</i>
				Attorney Docket Number	544092000124

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)				
<i>BA</i>	BA	JP-10-305735	11/1998	Toyota Motor Corp		✓
<i>BB</i>	BB	JP-03-031029	02/1991	Tokyo R & D:KK		✓

\*EXAMINER: Initial if information considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

\*EXAMINER: Initial if information considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	<i>[Signature]</i>	Date Considered	<i>September 15, 05</i>
-----------------------	--------------------	--------------------	-------------------------

va- 97668